

# WELCOME EDGEWARE BATTERY STORAGE PROJECT OPEN HOUSE



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Renewables

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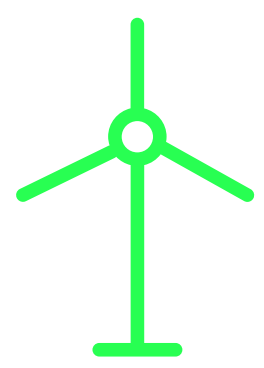
This Open House is hosted by “Edgewise BESS Project Limited Partnership” (the “Proponent”) and EDP Renewables Canada Ltd. (the “Qualified Applicant”)



# ABOUT EDP RENEWABLES NORTH AMERICA

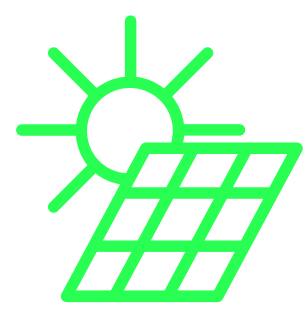
EDP Renewables Canada is a wholly-owned subsidiary of EDP Renovaveis, S.A.. EDPR Canada is headquartered in Toronto, Ontario and has been developing projects since 2012. The company currently operates the South Branch Wind Farm (30MW) and the Nation Rise Wind Farm (100MW), in the United Counties of Stormont, Dundas, and Glengarry, Ontario. Additionally, EDPR Canada is currently constructing the Sharp Hills Wind Farm (300MW) in Alberta and has over 1GW of wind, solar, and battery storage projects in development across the country. The company is supported by EDP Renewables North America, headquartered in Houston, Texas.

## OPERATIONAL PROJECTS



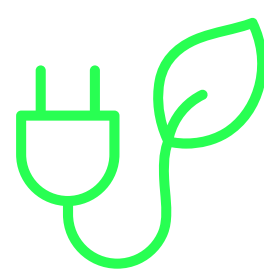
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WIND FARMS

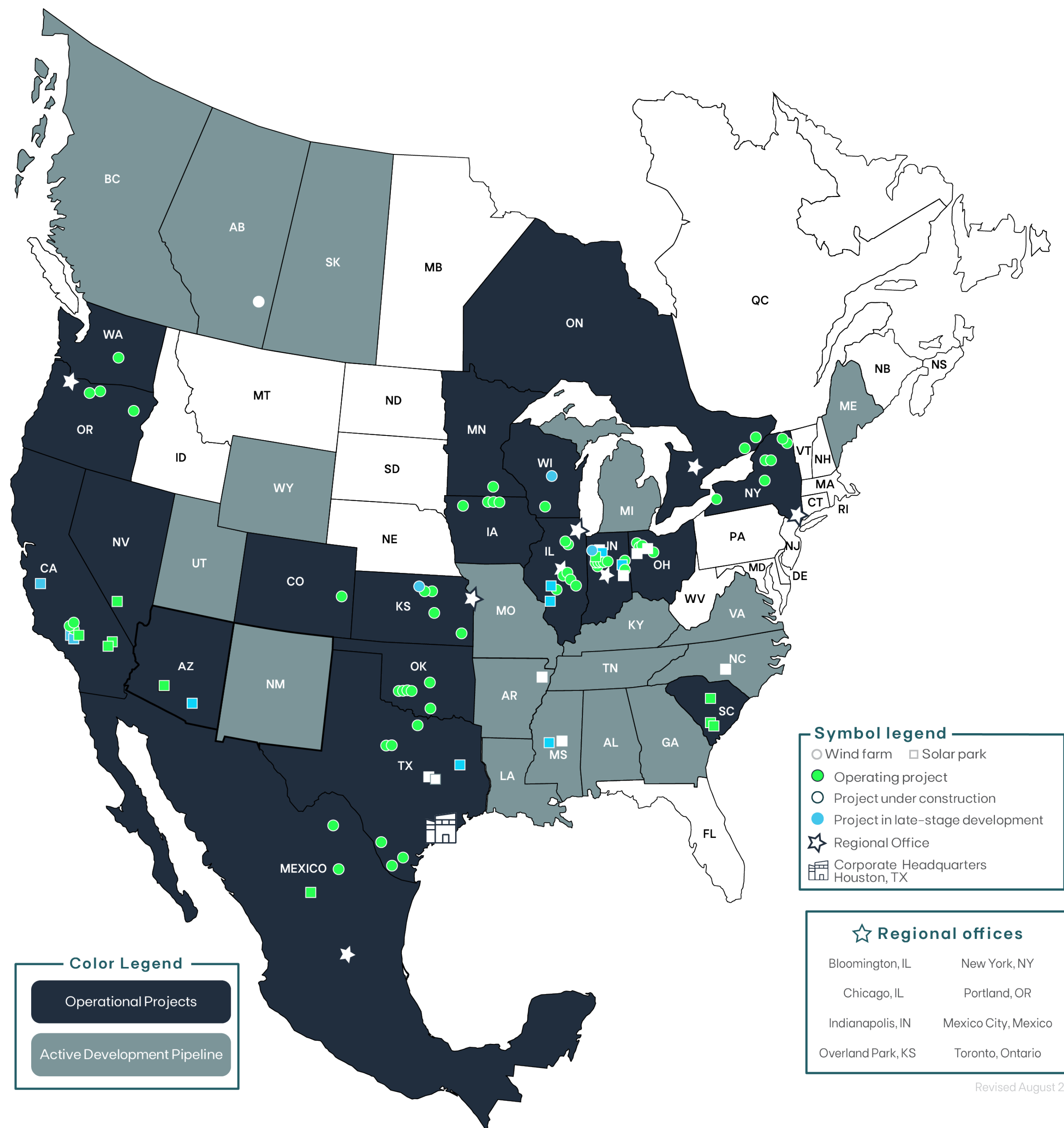


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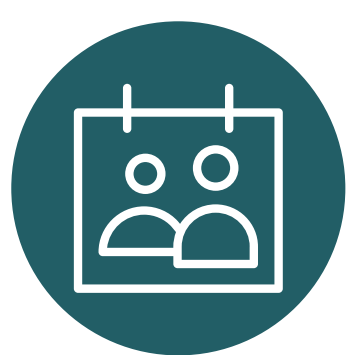
SOLAR PARKS



**8,400+**  
MEGAWATTS



## EDPR NA'S IMPACT (dollar figures in USD)



CREATED  
**1,090** permanent jobs  
**7,900+** construction jobs



PAID  
**\$379 million+** to landowners  
**\$308 million+** to local governments



GENERATED  
the equivalent of  
**2 million+ homes'**  
energy consumption



SAVED  
**12.4 billion+ gallons** of water  
AVOIDED  
**24 billion+ pounds** of CO<sub>2</sub>



MAINTAINED  
**278 million+ hours**  
of operational history



INVESTED  
**\$17 billion+** (approx.)  
in capital

# About energy storage

## Canada energy storage facts

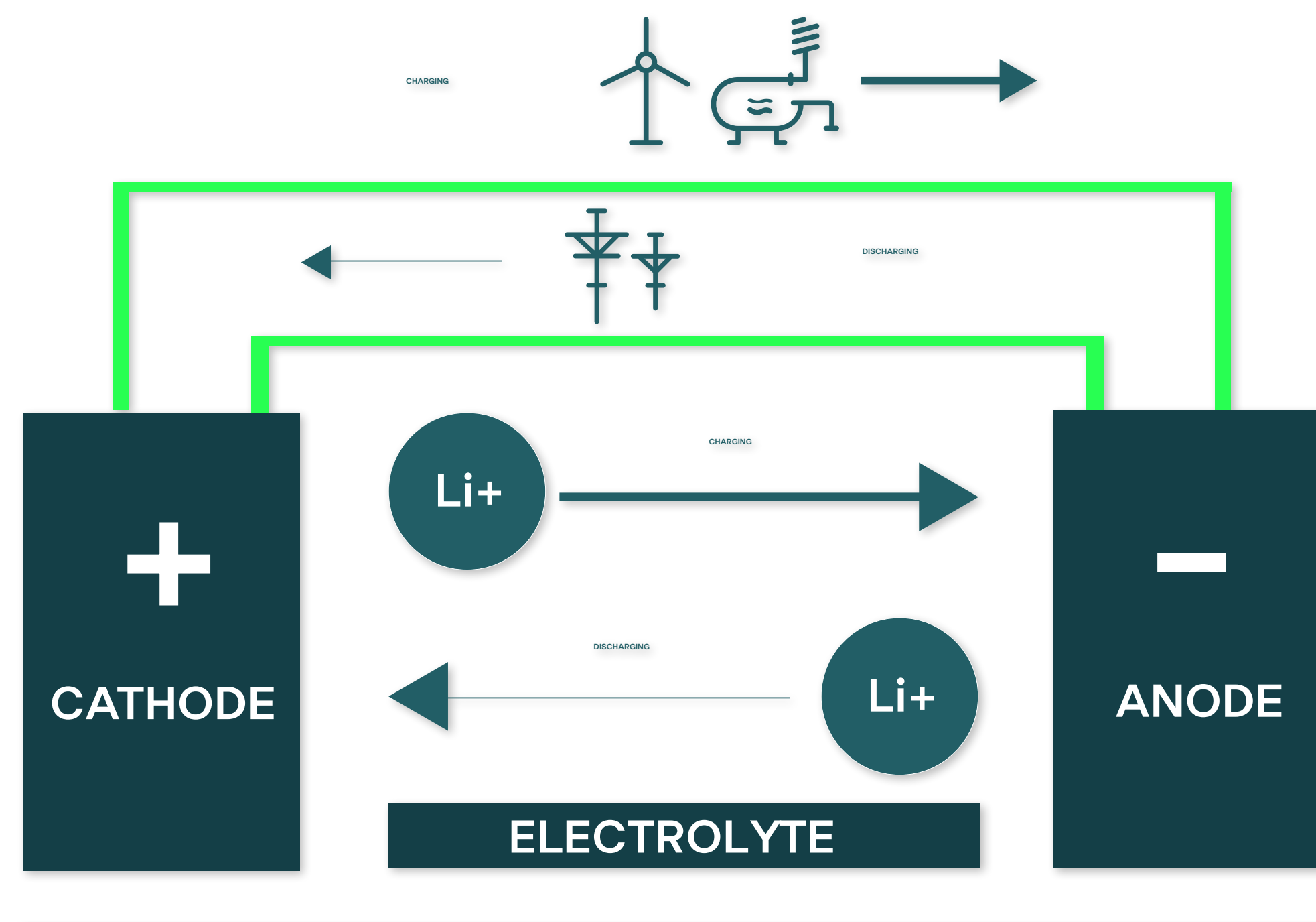
Energy storage enhances reliability, reduces costs, and increases grid resilience. Approximately **8-12 gigawatts of energy storage** generation would optimally support the net-zero transition of the Canadian electricity supply mix by 2035.<sup>1</sup>

### How is energy storage useful?

- Reduces outages and enhances resilience
- Decreases costs and saves money
- Bolsters a sustainable electrical grid
- Supports local economies

### How does energy storage work?

The most common electrochemical storage method is the **lithium-ion battery**. These are similar to the batteries that power your cell phones, laptops, or electric vehicles.



### What is a lithium-ion cell?



The battery is comprised of a positive cathode, a negative anode, a separator, an electrolyte, and positive and negative current collectors. When the battery is being charged by a power source, such as wind or solar power, lithium-ions move from the cathode, through the electrolyte and to the negative anode, storing energy for future use. When discharging power, lithium-ions are released by the anode and received by the cathode.

### Energy storage systems are fuel-neutral.

This means that they can capture and dispense electricity from oil, gas, coal, nuclear, geothermal, and EDP Renewables' wind and solar energy projects.

**Energy storage will contribute to powering Canada's journey to net-zero by 2050.**<sup>1</sup>

## Canada's energy transition

### BY THE NUMBERS

**10.5% increase**

Overall, the wind, solar, and energy storage sectors grew by **10.5%** in 2023.<sup>1</sup>

**~ 7+ megawatts (MW) will be added**

Forecasted to gain **more than 5 GW** of wind and **2 GW** of solar in the short term.<sup>1</sup>

**Ranked 8th in the world**

Canada ranked **8th in the world** for installed wind energy capacity at the end of 2022.<sup>2</sup>

**19+ GW of clean energy**

More than **19 GW** of installed utility-scale wind and solar energy.<sup>1</sup>

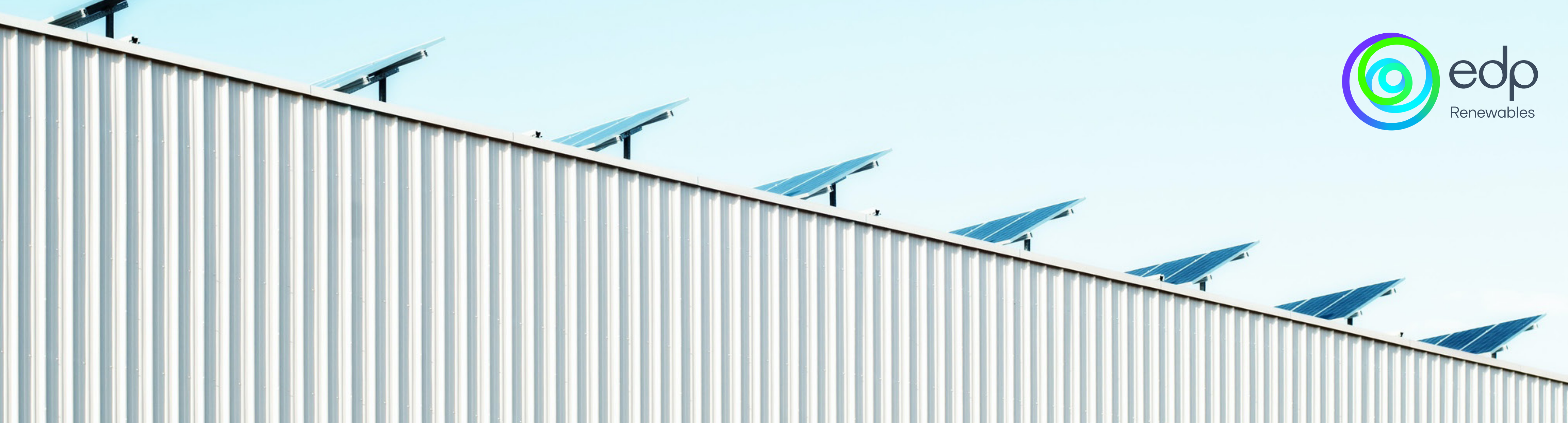
**1.8+ GW of new generation**

More than **1.8 GW of new generation** capacity in 2022, more than 2021's new capacity.<sup>1</sup>

**~ 7% of electricity demand**

Approximately **7% of Canada's 2020 electricity demand** was met by wind and solar energy in 2021.<sup>3</sup>

1. Canadian Renewable Energy Association, CanREA's 2050 Vision Report.  
2. IRENA Renewable Electricity Capacity and Generation Statistics, 2021.  
3. Canadian Renewable Energy Association, January 2022.



# Edgeware Battery Storage Project

Proponent name: Edgeware BESS Project Limited Partnership

Edgeware Battery Storage Project will be located in the City of St. Thomas in Elgin County, Ontario. The Edgeware Battery Storage Project is being developed in answer to the Independent Electricity System Operator's (IESO) Long-Term Request for Proposals (LT1 RFP) for the procurement of capacity services to meet system reliability needs..



UP TO  
**75 MW**



The proposed Edgeware Battery Storage Project is a battery energy storage facility sized to provide up to 75 MW of power over at least four (4) consecutive hours, totalling 300 MWh.

## Community Benefits

EDPR Canada has a strong track record of providing benefits to the local communities that host projects through tax revenue and economic development funds that create additional growth and civic investment, as demonstrated through our existing operational projects in Ontario.

The Edgeware Battery Storage Project will contribute annual tax payments to the City of St. Thomas.

## STABLE JOB CREATION

During construction, typical jobs include general labourers, BESS installers, concrete suppliers.

During operations, employees are needed for inspection and maintenance activities.

## LOCAL BUSINESS GROWTH

The project will spur new business for community halls, restaurants, gas stations, hotels, and more.

## STRENGTHENING LOCAL INFRASTRUCTURE

The project's tax payments will help fund local resources such as roads, schools, and first responders.



### ENERGY INDEPENDENCE

Edgeware Battery Storage Project will contribute to the energy security for the Province of Ontario, helping diversify domestic supply.

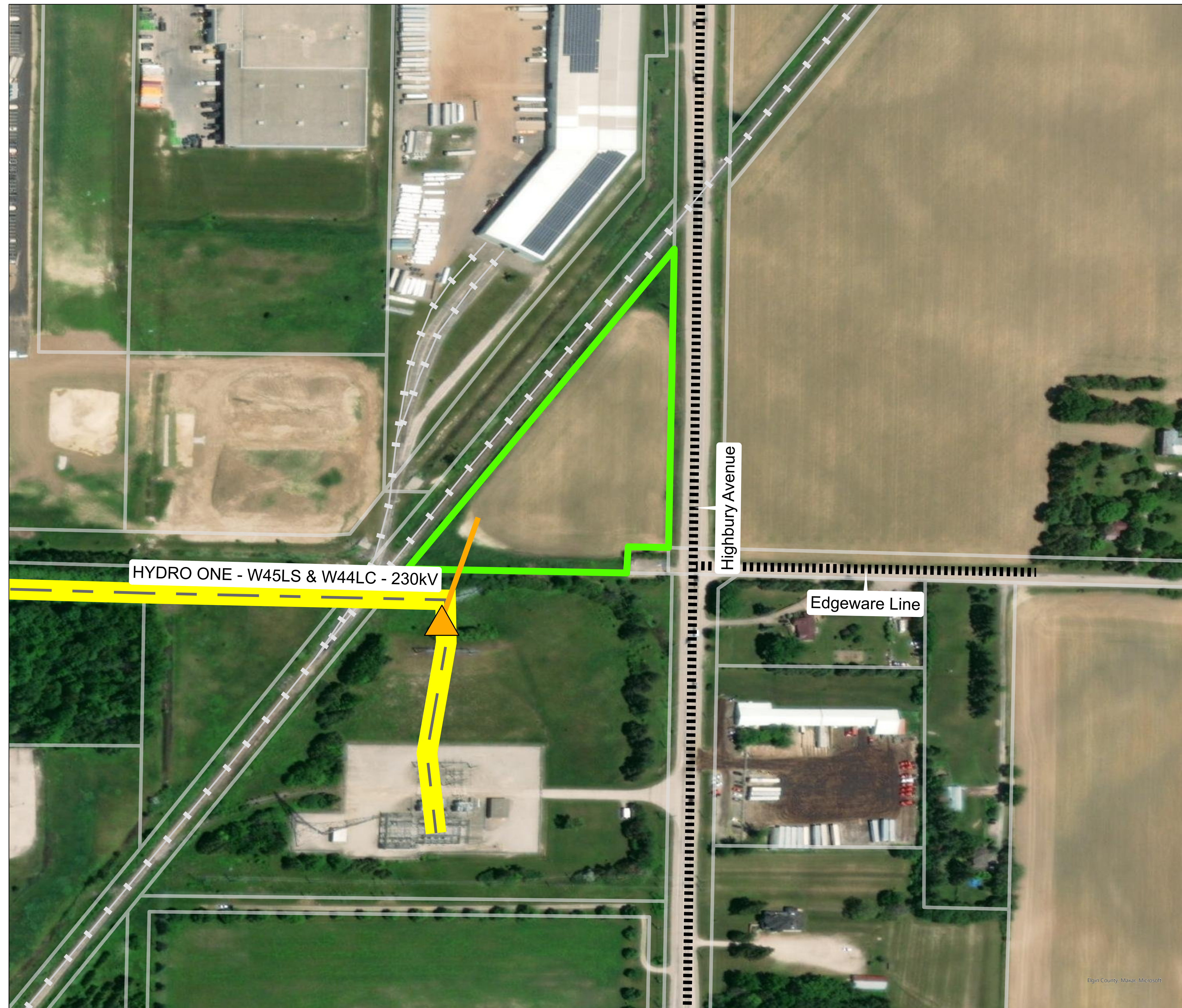


Energy storage will contribute to powering Canada's journey to net-zero by 2050.



Energy storage enhances reliability, reduces costs, and increases grid resilience.

# Edgware Battery Storage Project

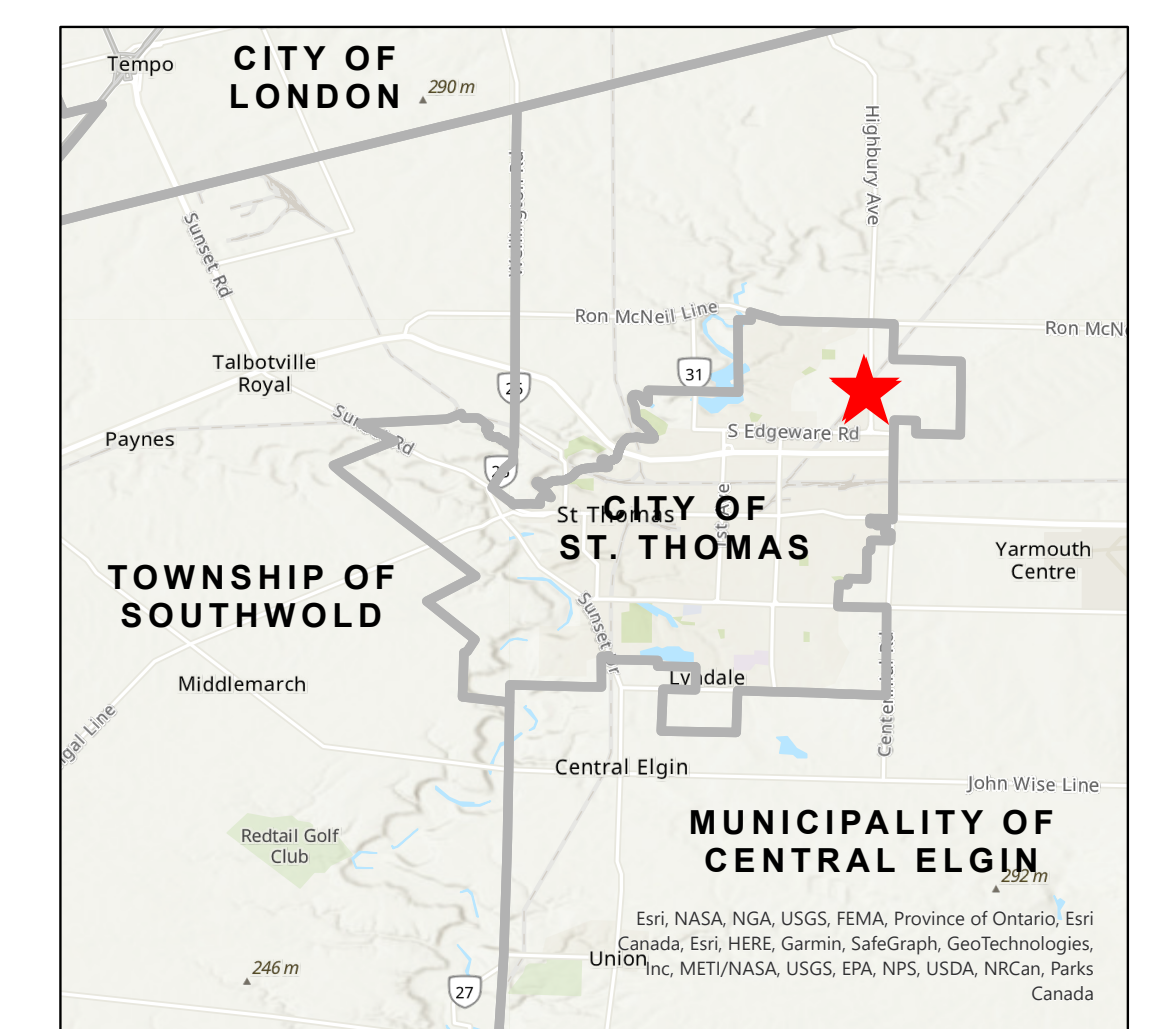
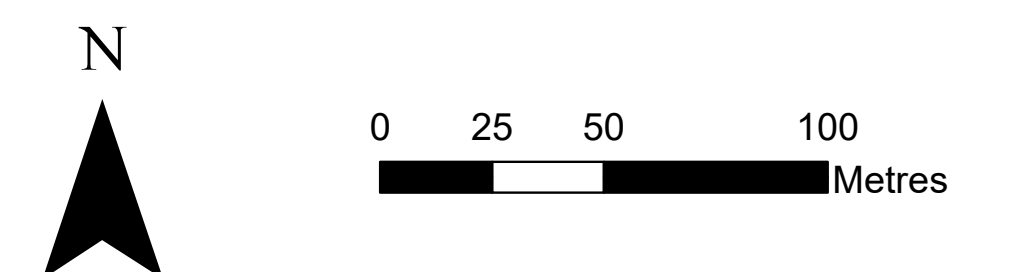


**EDP Renewables Canada Ltd.**  
**Edgware Battery Storage Project**

**Proponent: Edgware BESS Project Limited Partnership**  
**Project Name: Edgware Battery Storage Project**  
**Capacity: Up to 75MW**  
**Location: City of St. Thomas, Ontario**  
**Map Scale: 1: 1,500**

**Legend**

- Connection Point
- Connection Line
- Existing Hydro One Transmission Line
- Railroads
- Public Roads
- South Branch Battery Storage Project Land (Project Site)
- Land Parcels



November 2023  
 Note: Connection Line is approximate

**Project Location**

The proposed project would occupy approximately 5 acres of land within a parcel located on the west side of Highbury Avenue and Edgware Line in the City of St. Thomas, Ontario.

**Project Proponent Name**

Edgware BESS Project Limited Partnership

**Technology of the Long-Term Reliability Project**

Lithium-ion battery storage

**Nameplate Capacity: Up to 75 MW**

The proposed Project is a battery storage facility size to provide up to 75 MW over at least four (4) consecutive hours (300 MWh).

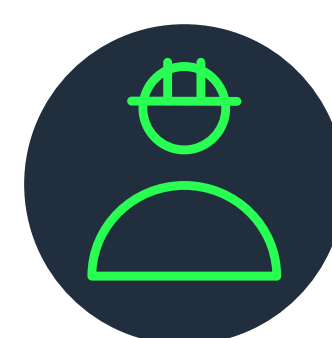
# Safety Measures

**As a company committed to a clean energy future, we take our impacts on the land, water, and air extremely seriously and devote significant resources to ensuring proper permitting, siting, and emergency preparations are taken.**



## Safe, Well-Tested Technology

Energy storage has been a part of our electricity grid since the 1930s and enjoys a safety record that is similar or better than other electricity generation, distribution, or management methods. In fact, the United States has more than 8,800 MW of battery storage capacity currently online.<sup>1</sup> In Canada, energy storage accounted for 214 MW by year-end 2022, with the majority coming from projects located in Ontario.<sup>2</sup>



## Chemical Safety

BESS facilities are designed to manage chemicals on site. In the unlikely event of a leak containment measures such as bunding, spill trays and chemical absorbents are in place to capture materials on site.

Chemical hazards or 'dangerous goods' are typically identified and addressed by way of a Hazard Assessment and Emergency Management Plan (or equivalent).



## Safety Risk

Most of us have a lithium-ion battery in our pocket all the time in our cell phone, or in electric cars – these aren't risk free either but are manageable and considered safe for the public when operated correctly.

BESS facilities are equipped with Battery Management Systems (BMS) that monitor the operational and fault status of the system for all parameters required to ensure safe operation of the BESS, including State of Charge (SOC), voltage, current, power limits, and temperatures. Parameters are monitored at the appropriate level of the battery cell, module and rack as applicable. The BMS functions to prevent potential fires by shutting down battery modules/racks if monitored conditions are outside of those permissible for safe operation.



## Safeguarding the Environment






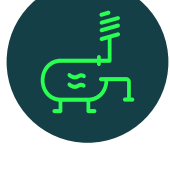
As with all BESS projects in Canada, we have to comply with federal, provincial and local wildlife regulations and standards to minimize any impact to surrounding wildlife.

Clean energy projects such as storage systems are far less harmful to wildlife than the energy sources it traditionally displaces, and the industry is proactively addressing the modest impacts on wildlife it could have.

# Emergency Preparedness

## EMERGENCY PREVENTION MEASURES

Containerized battery energy storage systems (BESS) are mandated to have a variety of prevention measures to ensure safe operation.

-  To begin with, the BESS is designed to strict federal and provincial standards.
-  Each BESS features smoke and temperature sensors as well as internal fire suppression systems. They are also monitored 24/7.
-  BESS systems feature internal containment trays to capture any dripping liquids from internal fire suppression systems and battery cell electrolytes which prevents spillage.
-  The layout of the BESS incorporates adequate spacing to mitigate fire spread to adjacent containers.
-  BESS containers are designed with exterior steel walls, with interior insulation for better cooling and to ensure fire containment.
-  BESS containers feature pressure relief systems such as deflagration panels which automatically vent any gases generated and allow the flames to vent out in a controlled manner to prevent damage to the surroundings.

## Emergency Response Plan

In addition to the emergency procedures, a successful applicant is **required to formulate an Emergency Response Plan** which includes first responder integration, education training and awareness of the local community.

In the unlikely event of fire or emergency, the remote monitoring centre will be informed and the affected battery container can be isolated from the rest of the installation, or from the grid altogether. The local fire department is informed, and additional cooling and the fire suppression systems are activated as preventative measures.

## WHAT ABOUT SPECIAL EQUIPMENT & TRAINING?

No special equipment other than regular firefighting equipment is required during an emergency.

Safety features and internal fire suppression systems are already installed inside the BESS containers. As part of the development of the Emergency Response Plan, we would engage with the local fire department on emergency response plans in conjunction with training opportunities.

# The IESO Opportunity

South Branch Wind Farm | ON

## The Province of Ontario's Need

After more than a decade of strong electricity supply, Ontario is entering a period of electricity generation needs. This is largely due to an increase in demand, the retirement of the Pickering Nuclear Plant, expiration of contracts for existing facilities, and the refurbishment of other nuclear generating units.

To address these needs, the IESO is procuring energy storage systems (capacity services) through the Long-Term 1 Request for Proposals (LT1 RFP).

For more information, visit the following websites:

IESO: [www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Planning-Outlook](http://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Planning-Outlook)

Ministry of Energy: [www.ontario.ca/page/powering-ontarios-growth](http://www.ontario.ca/page/powering-ontarios-growth)

Sources:  
IESO, Annual Acquisition Report & Long-Term Request for Proposals (LT1 RFP) Procurement Update (March 2023)  
Ministry of Energy, Powering Ontario's Growth: Ontario's Plan for a Clean Energy Future (July 2023)

## LT1 RFP – Natural Gas and Battery Storage (Capacity)

Competitively procure 2,518MW of year-round capacity services:

- 1,600 MW of storage
- 918 MW of non-storage capacity (natural gas)

Edgeware Battery Storage Project is intended to help address the growing electricity needs identified by the Independent Electricity System Operator in their Annual Planning Outlook, and the Ministry of Energy's report Powering Ontario's Growth.

## IESO Opportunity – Long Term 1 Request for Proposals (LT1 RFP)

The proposed Project is being developed in answer to the Independent Electricity System Operator's (IESO) Long-Term Request for Proposals (LT1 RFP) for the procurement of capacity services to meet system reliability needs.

### LONG TERM 1 RFP TIMELINE

<b>September 29, 2023</b>	IESO's released the Final LT1 Request for Proposals (RFP) and LT1 Contract
<b>November 17, 2023</b>	Proponent's deadline to submit questions and comments to the IESO
<b>November 28, 2023</b>	IESO's deadline for issuing Addenda to LT1 RFP and LT1 Contract, if any
<b>December 12, 2023</b>	Proposal submission deadline
<b>May 10, 2024</b>	Target date for IESO notification to all proponents and announcement of selected proposals
<b>May 2027 – May 2028</b>	Commercial Operations Date





# Permitting Overview

The Ministry of Environment, Conservation and Parks is the main authority that provides Provincial permitting and oversight.

The Project will be assessed through the Class Environmental Assessment (EA) for Minor Transmission Facilities. It will be eligible for registration on the Environmental Activity and Sector Registry (EASR) Air/Noise. It will also require an Environmental Compliance Approval (ECA) for Sewage Works. Some local permits may be required.

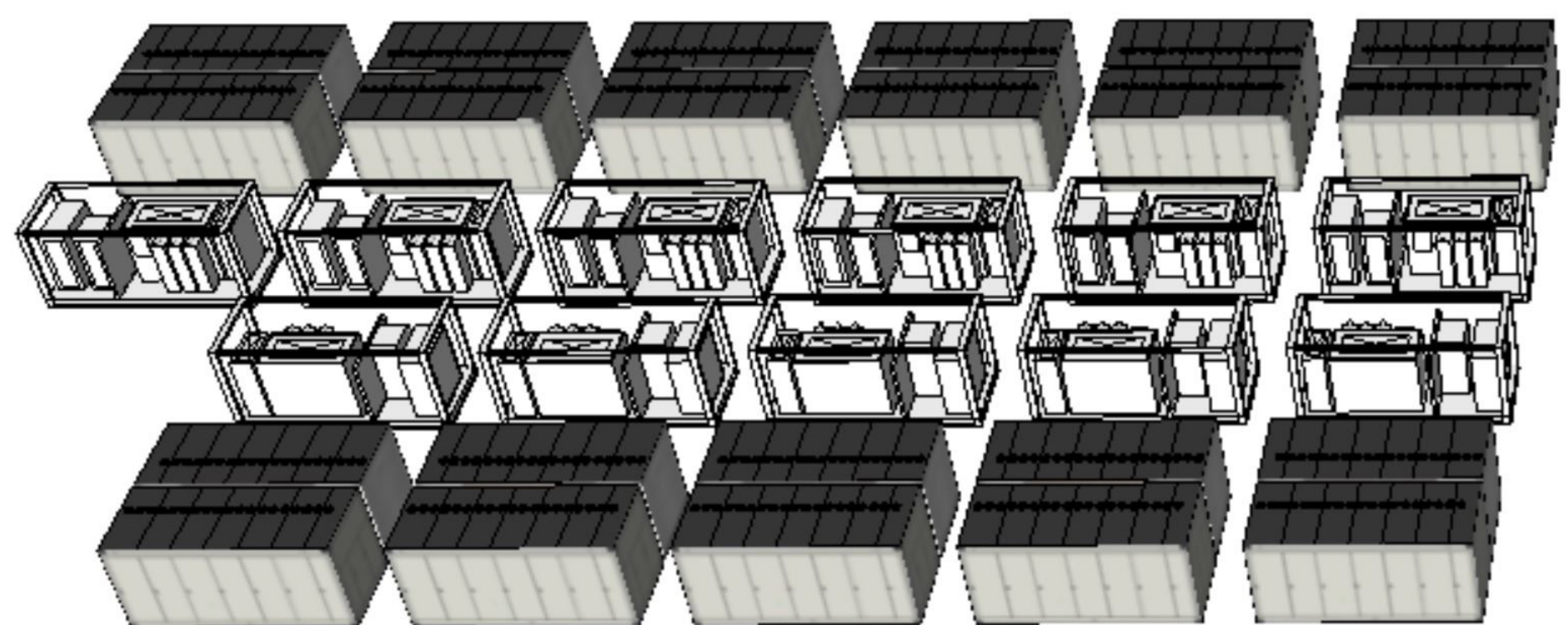
## TENTATIVE PERMITTING TIMELINE

<b>Q4 2023</b>	Preliminary site characterization
<b>Q2 2024</b>	LT1 Selection Announcement
<b>Q2 2024</b>	Notice of Commencement of a Class EA Screening
<b>Q2-Q3 2024</b>	Natural Heritage Baseline
<b>Q2-Q3 2024</b>	Noise Impact Assessment
<b>Q4 2024</b>	Notice of Completion of a Class EA Screening
<b>Q4 2024</b>	Environmental Compliance Approval for Sewage Works
<b>Q4 2024</b>	Environmental Activity and Sector Registry
<b>Q4 2024</b>	Local permits

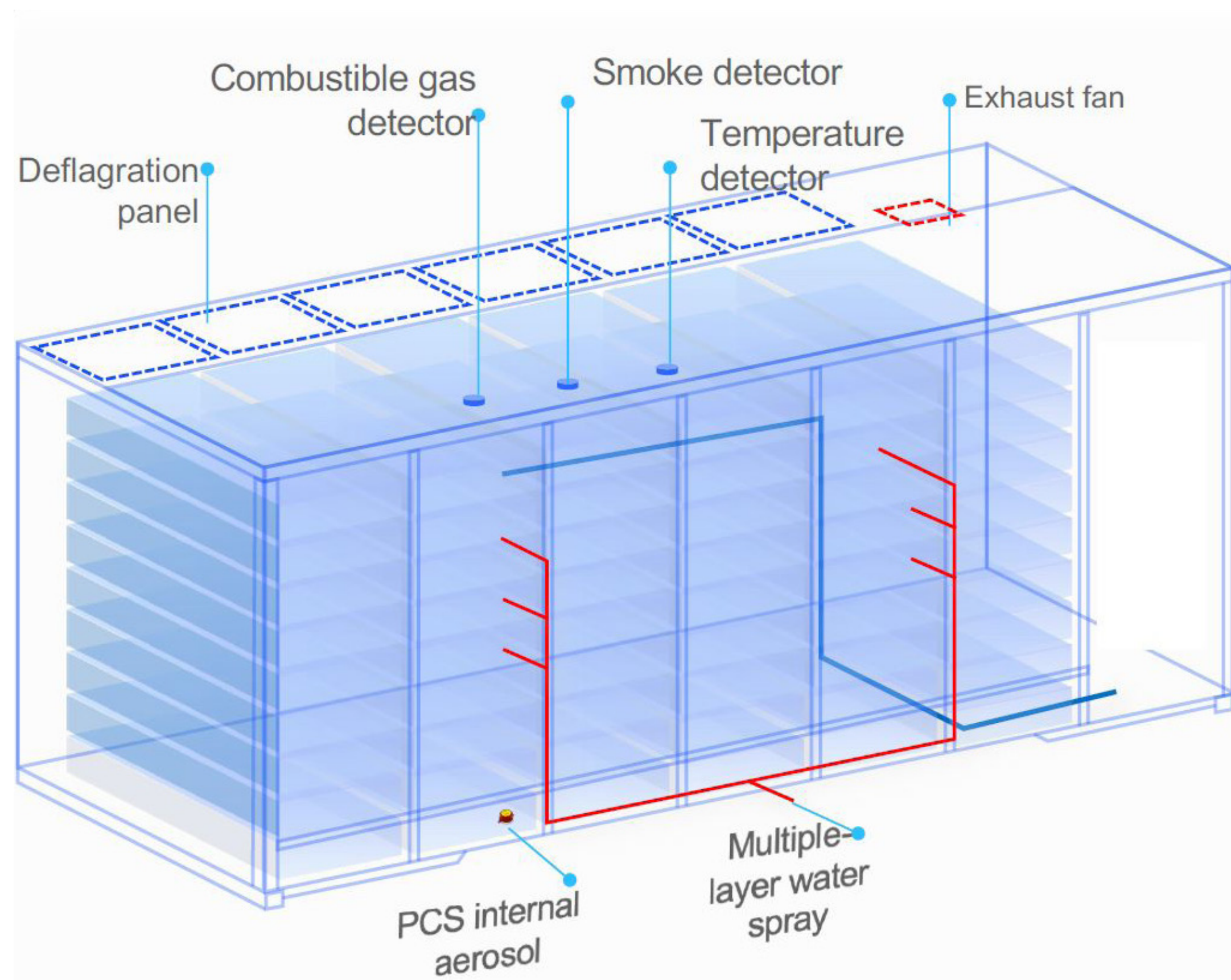




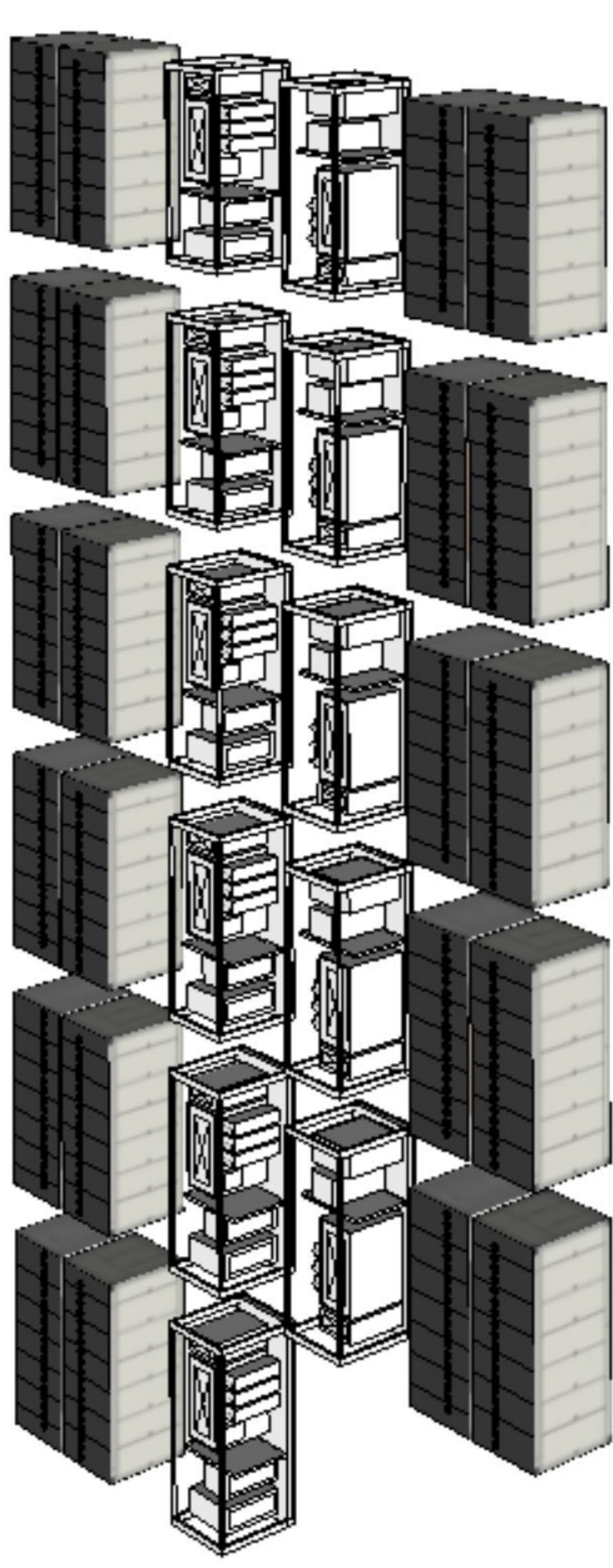
**Example of Container & Transformer**



**Example of Multiple Containers & Multiple Transformers**



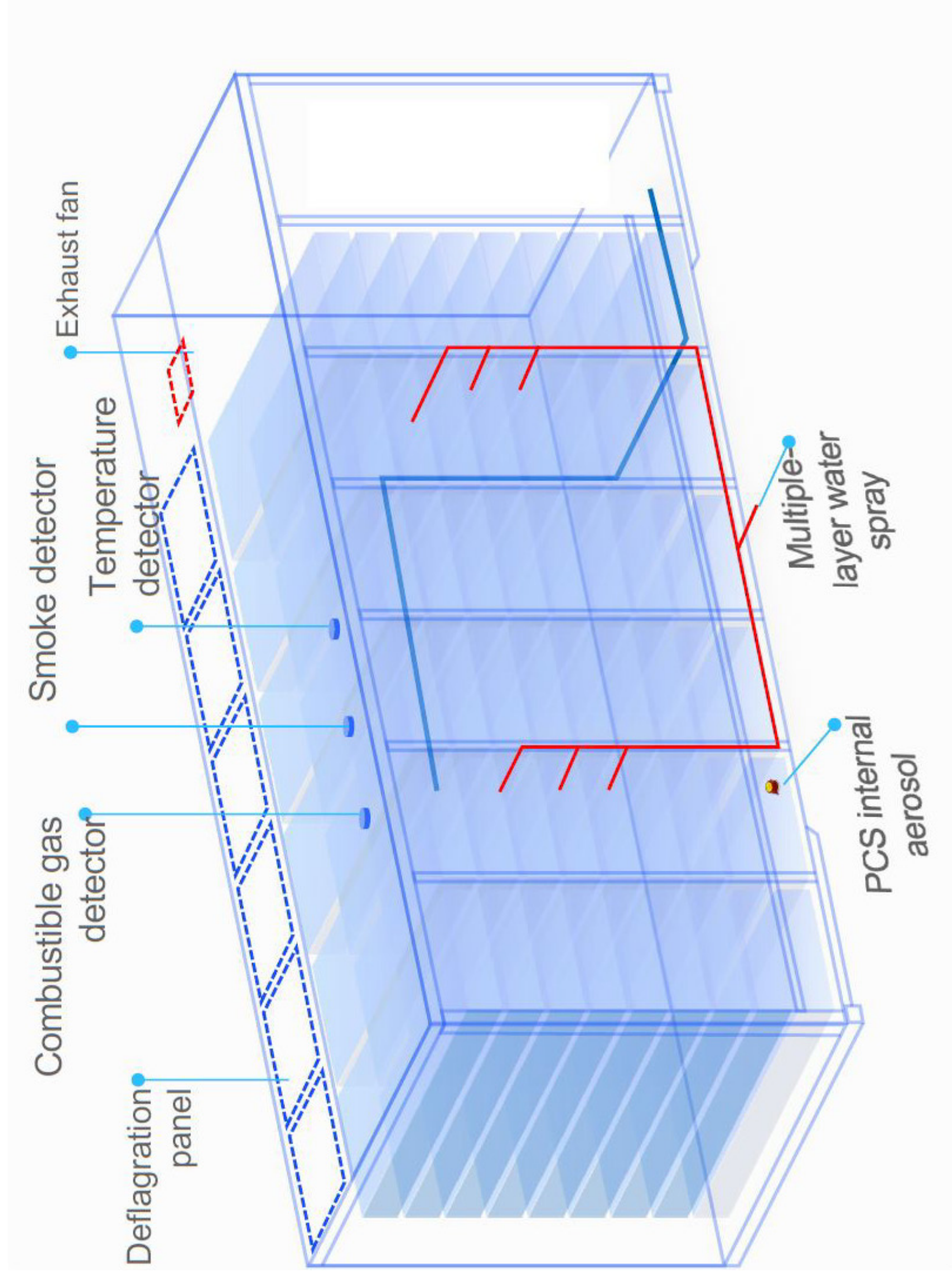
**Example of BESS Safety Features**



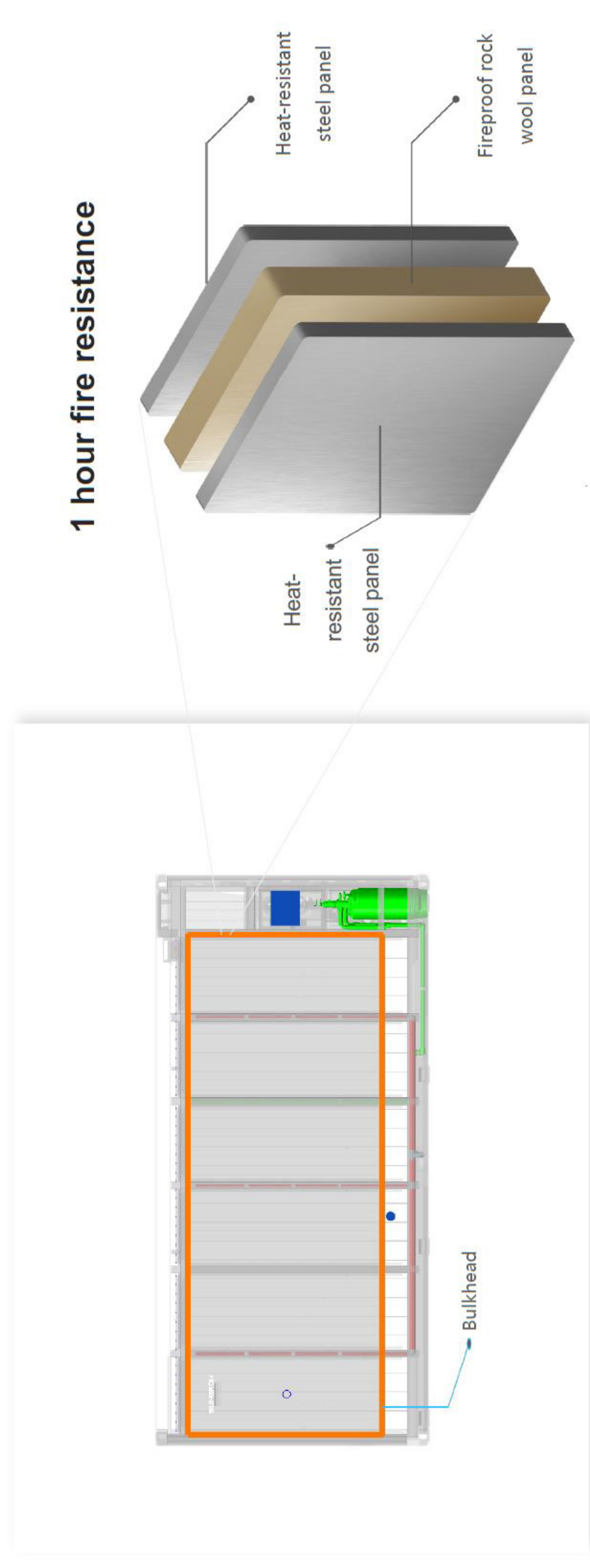
**Example of Multiple Containers & Multiple Transformers**



**Example of Container & Transformer**



**Example of BESS Safety Features**



**Example of BESS safety feature (construction)**